Labsheet4

Objective: To learn how to implement simple combinational circuits

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| l | en | S2 | S1 | Y3 | Y2 | Y1 | Y0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| 0 | 1 | x | x | 0 | 0 | 0 | 0 |

1. Design the following Demultiplexer .Design code is given, but write the test bench yourself. And show us the test results.

module demux (s2,s1,I,en,y0,y1,y2,y3)  
input s2,s1,I,en;  
output y0,y1,y2,y3;  
assign y0=(~s2)&(~s1)& I& ~en;  
assign y1=(~s2)& s1& I&~en;  
assign y2=s2&(~s1)& I & ~en;  
assign y3=s2& s1 & I & ~en;  
end module

1. Implement the following circuits and verify the same with possible inputs :
   1. F = AB + AC+ BC
   2. Y = ABC + ACD
   3. Y = A’B + C’D’
   4. F = (AB)’ + (AC)’ + AD
   5. IF S=1 , Y = ABC + AC , OTHERWISE Y = ( A+B+C) A